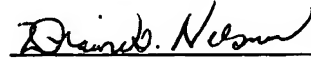




PATENT APPLICATION

I hereby certify that this transmittal and the documents referred to as enclosed herein are being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 via Label No. EV342336967US addressed to:
MAIL STOP: REISSUE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

on September 23, 2003.


Diane S. Nelson, Paralegal

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No. : UNKNOWN
Applicant : C. Jeffrey Brinker, et al.
Filed : September 23, 2003
Title : METHOD FOR MAKING SURFACTANT-TEMPLATED THIN FILMS

Docket No. : 06375-1001

Mail Stop: Reissue
Commissioner for Patents
United States Patent and Trademark Office
PO Box 1450
Alexandria, Virginia 22313-1450

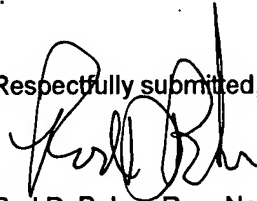
ASSOCIATE POWER OF ATTORNEY

Dear Sir:

Rod D. Baker, a principal attorney in the above-identified application for Letters Patent, hereby appoints
as associate attorneys with full power:

Deborah A. Peacock, Reg. No. 31,649
Jeffrey D. Myers, Reg. No. 35,964
Elmer A. Klavetter, Reg. No. 42,743
Paul Adams, Reg. No. 21,096
Stephen A. Slusher, Reg. No. 43,924 and
Vidal A. Oaxaca, Reg. No. 44,267.

Respectfully submitted,



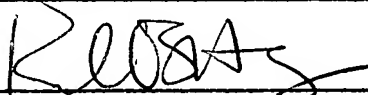
Rod D. Baker, Reg. No. 35,434
Direct line: (505) 998-1504

Date: September 23, 2003

Attorney for Applicant(s)
PEACOCK, MYERS & ADAMS, P.C.
P.O. Box 26927
Albuquerque, New Mexico 87125-6927
Telephone: (505) 998-1500
Facsimile No. (505) 243-2542
Customer No. 005179



PTO/SB/53 (05-03)
Approved for use through 01/31/2004. OMB 0651-0033
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

REISSUE APPLICATION: CONSENT OF ASSIGNEE; STATEMENT OF NON-ASSIGNMENT		Docket Number (Optional) 06375-1001
This is part of the application for a reissue patent based on the original patent identified below.		
Name of Patentee(s) BRINKER, et. al		
Patent Number 6,387,453	Date Patent Issued 14 May 2002	
Title of Invention METHOD FOR MAKING SURFACTANT - TEMPLATED THIN FILMS		
<p>1. <input checked="" type="checkbox"/> Filed herein is a statement under 37 CFR 3.73(b). (Form PTO/SB/96)</p> <p>2. <input type="checkbox"/> Ownership of the patent is in the inventor(s), and no assignment of the patent is in effect.</p> <p>One of boxes 1 or 2 above must be checked. If multiple assignees, complete this form for each assignee. If box 2 is checked, skip the next entry and go directly to "Name of Assignee".</p> <p>The written consent of all assignees and inventors owning an undivided interest in the original patent is included in this application for reissue.</p>		
The assignee(s) owning an undivided interest in said original patent is/are <u>Sandia Corporation</u> , and the assignee(s) consents to the accompanying application for reissue.		
Name of assignee/inventor (if not assigned) Sandia Corporation		
Signature 	Date 8/4/03	
Typed or printed name and title of person signing for assignee (if assigned) RUSSELL D. ELLIOTT CHIEF INTELLECTUAL PROPERTY COUNSEL		

This collection of information is required by 37 CFR 1.172. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 6 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



STATEMENT UNDER 37 CFR 3.73(b)

Applicant/Patent Owner: Sandia Corporation

Application No./Patent No.: 6,387,453 Filed/Issue Date: 14 May 2002

Entitled: METHOD FOR MAKING SURFACTANT - TEMPLATED THIN FILMS

Sandia Corporation, a corporation
(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that it is:

1. ☒ the assignee of the entire right, title, and interest; or
2. ☐ an assignee of less than the entire right, title and interest.
The extent (by percentage) of its ownership interest is _____ %
in the patent application/patent identified above by virtue of either:

A. ☒ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.

OR

B. ☐ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as shown below:

1. From: _____ To: _____
The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.
2. From: _____ To: _____
The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.
3. From: _____ To: _____
The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet.

☐ Copies of assignments or other documents in the chain of title are attached.
(NOTE: A separate copy (i.e., the original assignment document or a true copy of the original document) must be submitted to Assignment Division in accordance with 37 CFR Part 3, if the assignment is to be recorded in the records of the USPTO. See MPEP 302.08)

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

8/4/03
Date
(505) 844-5626
Telephone number

Russell D. Elliott
Typed or printed name
[Signature]
Signature
Chief IP Counsel
Title

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

SD6375/S92350

ASSIGNMENT

WHEREAS, C. Jeffrey Brinker and Hongyou Fan, of Albuquerque, New Mexico, and Yunfeng Lu, of San Jose, California, have made an invention relating to **METHOD FOR MAKING SURFACTANT-TEMPLATED THIN FILMS** in the course of the work authorized by Contract DE-AC04-94AL85000 between SANDIA CORPORATION and the UNITED STATES DEPARTMENT OF ENERGY, said invention being disclosed and claimed in an application for United States patent, identified as DOE Docket No: S-92350, duly executed by said inventors, and

WHEREAS Inventor(s), in consideration of employment by Sandia Corporation, has(have) agreed, among other things, to assign to Sandia Corporation, its successors and assigns, all rights to inventions, discoveries, or improvements made or conceived in the course of their employment; and

WHEREAS, the Government of the United States, as represented by the U.S. Department of Energy has granted a waiver of Government rights in the above-identified invention to Sandia Corporation under Class Waiver W(C)93-012, and

THEREFORE, Inventor(s) hereby sells, assigns, and transfers unto Sandia Corporation their entire right, title, and interest in and to said invention and in and to all resulting patents, wherever they may be granted, as well as reissues or extensions of said patents.

Inventor(s) covenants with Sandia Corporation that, except for the rights, if any, of the Government, his/her interest in the rights and property herein conveyed is free and clear of any encumbrance and that they have full right to convey the same as herein expressed. They agree, at the request of Sandia corporation, to make, execute, and deliver to Sandia Corporation, the Government, or other party prosecuting patent applications on this invention, any and all papers, documents, affidavits, applications, statements or other instruments relating to said invention, take all rightful oaths and do all acts as may reasonably be required of them in or incident to the prosecution of any or all applications on said invention or in the adjustment or settlement of any interferences or other actions or proceedings that said applications or patents thereon may encounter or in which they may become involved.

SD6375/S92350

Page 2

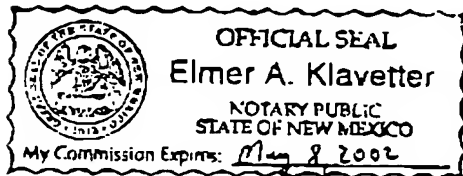
Signed at Albuquerque, New Mexico.

C. Jeffrey Brinker
C. Jeffrey Brinker
Hongyou Fan
Hongyou Fan

Date: 2/28/00Date: 2/28/00

STATE OF NEW MEXICO)
) ss:
COUNTY OF BERNALILLO)

On the the dates listed above, personally appeared before me, Elmer A. Klavetter, Notary Public, C. Jeffrey Brinker and Hongyou Fan, to me known to be the individual(s) described in and who executed the foregoing instrument, and who acknowledged to me that they executed the same.



Elmer A. Klavetter
Notary Public

Approved and consented to this 3 day of March, 2000.

SANDIA CORPORATION

Timothy D. Stanley
Chief Patent Counsel
Patent and Licensing Office, MS 0161

SD6375/S92350

Page 3

Signed at San Jose, California.

Yunfeng Lu
Yunfeng Lu

Date: 11-22-99

STATE OF CALIFORNIA)
) ss:
COUNTY OF SAN JOSE)

On the the dates listed above, personally appeared before me, JAYESH N. PATEL, NOTARY
Notary Public, Yunfeng Lu, to me known to be the individual(s) described in and who executed PUBL
the foregoing instrument, and who acknowledged to me that they executed the same.



Jayesh Patel
Notary Public

Approved and consented to this 3 day of March, 1999.

SANDIA CORPORATION

Timothy D. Stanley
Chief Patent Counsel
Patent and Licensing Office, MS 0161



PTO/SB/51 (06-03)

Approved for use through 01/31/2004. OMB 0651-0033

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

REISSUE APPLICATION DECLARATION BY THE INVENTOR

Docket Number (Optional)

06375-1001

I hereby declare that:

Each inventor's residence, mailing address and citizenship are stated below next to their name.

I believe the inventors named below to be the original and first inventor(s) of the subject matter which is described and claimed in patent number 6,387,453 granted May 14, 2002 and for which a reissue patent is sought on the invention entitled METHOD FOR MAKING SURFACTANT -

TEMPLATED THIN FILMS

the specification of which

☒ is attached hereto.☐ was filed on _____ as reissue application number _____

and was amended on _____
(If applicable)

I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56.

☐ I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or (f), or 365(b). Attached is form PTO/SB/2B (or equivalent) listing the foreign applications.

I verily believe the original patent to be wholly or partly inoperative or invalid, for the reasons described below. (Check all boxes that apply.)

☐ by reason of a defective specification or drawing.☒ by reason of the patentee claiming more or less than he had the right to claim in the patent.☐ by reason of other errors.

At least one error upon which reissue is based is described below. If the reissue is a broadening reissue, such must be stated with an explanation as to the nature of the broadening:

see "INVENTOR' STATEMENT REGARDING ERROR" ATTACHED HERETO

[Page 1 of 2]

This collection of information is required by 37 CFR 1.175. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

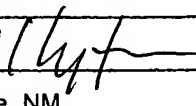
If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

(REISSUE APPLICATION DECLARATION BY THE INVENTOR, page 2)		Docket Number (Optional) 06375-1001	
All errors corrected in this reissue application arose without any deceptive intention on the part of the applicant. As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the United States Patent and Trademark Office connected therewith.			
Name(s)	Registration Number		
Rod D. Baker	35,434		
Jeffrey D. Myers	35,964		
Elmer A. Klavetter	42,743		
Correspondence Address: Direct all communications about the application to:			
<input type="checkbox"/> Customer Number:			
OR			
<input type="checkbox"/> Firm or Individual Name	PEACOCK, MYER & ADAMS		
Address			
Address	P. O. BOX 26927		
City	ALBUQUERQUE	State	NM Zip 87125
Country	USA		
Telephone	505-998-1500	Fax	505-242-2542
I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine and imprisonment, or both, under 18 U.S.C. 1001, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this declaration is directed.			
Full name of sole or first inventor (given name, family name) C. Jeffrey Brinker			
Inventor's signature	Date		
Residence Albuquerque, NM	Citizenship USA		
Mailing Address 14 Eagle Nest Dr. NE, Albuquerque, NM 87122			
Full name of second joint inventor (given name, family name) Yunfeng Lu			
Inventor's signature	Date <i>cfz</i> <i>ln</i> 9/8/2003		
Residence New Orleans, LA	Citizenship People's Republic of China		
Mailing Address 300 Lindy Boggs Center, Tulane University, New Orleans, LA 70118			
Full name of third joint inventor (given name, family name) Hong you Fan			
Inventor's signature	Date		
Residence Albuquerque, NM	Citizenship People's Republic of China		
Mailing Address 8421 S. Sandoval Street, NE, Albuquerque, NM 87122			
<input type="checkbox"/> Additional joint inventors or legal representative(s) are named on separately numbered sheets forms PTO/SB/02A or 02LR attached hereto.			

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

(REISSUE APPLICATION DECLARATION BY THE INVENTOR, page 2)		Docket Number (Optional) 06375-1001	
All errors corrected in this reissue application arose without any deceptive intention on the part of the applicant. As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the United States Patent and Trademark Office connected therewith.			
Name(s)		Registration Number	
Rod D. Baker		35,434	
Jeffrey D. Myers		35,964	
Elmer A. Klavetter		42,743	
Correspondence Address: Direct all communications about the application to:			
<input type="checkbox"/> Customer Number:			
OR			
<input type="checkbox"/> Firm or Individual Name	PEACOCK, MYER & ADAMS		
Address			
Address	P. O. BOX 26927		
City	ALBUQUERQUE	State	NM Zip 87125
Country	USA		
Telephone	505-998-1500	Fax	505-242-2542
I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine and imprisonment, or both, under 18 U.S.C. 1001, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this declaration is directed.			
Full name of sole or first inventor (given name, family name)		C. Jeffrey Brinker	
Inventor's signature	Date		8/8/03
Residence	Citizenship		USA
Albuquerque, NM			
Mailing Address			
14 Eagle Nest Dr. NE, Albuquerque, NM 87122			
Full name of second joint inventor (given name, family name)		Yunfeng Lu	
Inventor's signature	Date		
Residence	Citizenship		
New Orleans, LA	People's Republic of China		
Mailing Address			
300 Lindy Boggs Center, Tulane University, New Orleans, LA 70118			
Full name of third joint inventor (given name, family name)		Hong you Fan	
Inventor's signature	Date		
Residence	Citizenship		
Albuquerque, NM	People's Republic of China		
Mailing Address			
8421 S. Sandoval Street, NE, Albuquerque, NM 87122			
<input type="checkbox"/> Additional joint inventors or legal representative(s) are named on separately numbered sheets forms PTO/SB/02A or 02LR attached hereto.			

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

(REISSUE APPLICATION DECLARATION BY THE INVENTOR, page 2)		Docket Number (Optional) 06375-1001	
All errors corrected in this reissue application arose without any deceptive intention on the part of the applicant. As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the United States Patent and Trademark Office connected therewith.			
Name(s)		Registration Number	
Rod D. Baker		35,434	
Jeffrey D. Myers		35,964	
Elmer A. Klavetter		42,743	
Correspondence Address: Direct all communications about the application to:			
<input type="checkbox"/> Customer Number:			
OR			
<input type="checkbox"/> Firm or Individual Name	PEACOCK, MYER & ADAMS		
Address			
Address	P. O. BOX 26927		
City	ALBUQUERQUE	State	NM Zip 87125
Country	USA		
Telephone	505-998-1500	Fax	505-242-2542
I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine and imprisonment, or both, under 18 U.S.C. 1001, and that such willful false statements may jeopardize the validity of the application, any patent issuing thereon, or any patent to which this declaration is directed.			
Full name of sole or first inventor (given name, family name) C. Jeffrey Brinker			
Inventor's signature		Date	
Residence Albuquerque, NM		Citizenship USA	
Mailing Address 14 Eagle Nest Dr. NE, Albuquerque, NM 87122			
Full name of second joint inventor (given name, family name) Yunfeng Lu			
Inventor's signature		Date	
Residence New Orleans, LA		Citizenship People's Republic of China	
Mailing Address 300 Lindy Boggs Center, Tulane University, New Orleans, LA 70118			
Full name of third joint inventor (given name, family name) Hong you Fan			
Inventor's signature 		Date 8/8/03	
Residence Albuquerque, NM		Citizenship People's Republic of China	
Mailing Address 8421 S. Sandoval Street, NE, Albuquerque, NM 87122			
<input type="checkbox"/> Additional joint inventors or legal representative(s) are named on separately numbered sheets forms PTO/SB/02A or 02LR attached hereto.			

ADDENDUM RE: INVENTORS' STATEMENT REGARDING ERROR

U.S. Patent No. 6,387,453 contains errors that resulted in the patentees claiming less than they had the right to claim in the patent. The principal error is that the step of the method of claim 1, the "mixing a precursor sol" step, is limited to the preparation of a "silica sol." A purpose of this broadening reissue is to obtain a claim omitting the needless limitation to "silica" as a modifier of the "sol" prepared by the first step of claim 1.

A second error resulted in mis-claiming or under-claiming as a result of a typographical error and a redundancy that occurred in claim 7. (Claim 7 depends from original claim 1.) Claim 7, as issued, contains an error in the Markush group; the first-recited compound was, through typographical error, listed as "tetraethylorthosilicate" when it should have been given as "tetramethylorthosilicate." Also, the double-recitation of aluminum iso-propoxide in the Markush group of claim 7 is a mistaken redundancy.

The Applicants propose to correct the foregoing errors by amending claims 1 and to broaden and correct them. As amended, claim 1 does not limit the first step of the inventive method to the preparation of "silica" sol. As amended, claim 7 recites the proper members of the Markush group of compounds from which the precursor sol is selected.

Thus, claim 1 as issued recites:

1. An evaporation-induced self-assembly method to prepare a liquid, crystalline film mesophase material, comprising:

mixing a precursor sol, a solvent, a surfactant, and an interstitial compound to prepare a silica sol, wherein said surfactant is at a concentration less than the critical micelle concentration; and

evaporating a portion of the solvent from said silica sol to form a liquid, crystalline, film mesophase material.

By reissue, Applicants broaden the claim by removing the two occurrences of the word "silica" where it modifies the word "sol." Thus, the amended claim would read on methods where the sol prepared is not necessarily a "silica" sol.

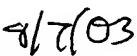
Claim 7 as issued claims:

7. The method of claim 1 wherein the precursor sol is selected from the group consisting of tetraethylorthosilicate, tetraethylorthosilicate, titanium butoxide, titanium iso-propoxide, zirconium n-butoxide, aluminum iso-propoxide, and aluminum iso-propoxide.

Claim 7 should be reissued to change the first listed compound to tetramethylorthosilicate (i.e., "methyl" instead of "ethyl") and deleting the redundantly recited compound aluminum iso-propoxide.

The errors in claims 1 and 7 discussed above occurred without any deceptive intent, and should be rectified in a reissued patent.


C. Jeffrey Brinker


Date signed

Yunfeng Lu

Date signed

Hongyou Fan

Date signed

Claim 7 as issued claims:

7. The method of claim 1 wherein the precursor sol is selected from the group consisting of tetraethylorthosilicate, tetraethylorthosilicate, titanium butoxide, titanium iso-propoxide, zirconium n-butoxide, aluminum iso-propoxide, and aluminum iso-propoxide.

Claim 7 should be reissued to change the first listed compound to tetramethylorthosilicate (i.e., "methyl" instead of "ethyl") and deleting the redundantly recited compound aluminum iso-propoxide.

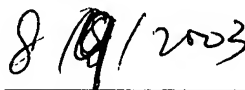
The errors in claims 1 and 7 discussed above occurred without any deceptive intent, and should be rectified in a reissued patent.

C. Jeffrey Brinker

Date signed



Yunfeng Lu



Date signed

Hongyou Fan

Date signed

Claim 7 as issued claims:

7. The method of claim 1 wherein the precursor sol is selected from the group consisting of tetraethylorthosilicate, tetraethylorthosilicate, titanium butoxide, titanium iso-propoxide, zirconium n-butoxide, aluminum iso-propoxide, and aluminum iso-propoxide.

Claim 7 should be reissued to change the first listed compound to tetramethylorthosilicate (i.e., "methyl" instead of "ethyl") and deleting the redundantly recited compound aluminum iso-propoxide.

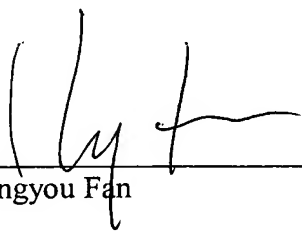
The errors in claims 1 and 7 discussed above occurred without any deceptive intent, and should be rectified in a reissued patent.

C. Jeffrey Brinker

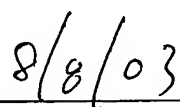
Date signed

Yunfeng Lu

Date signed



Hongyou Fan



Date signed